Amendments to the Claims:

1. (Previously Presented) A heater system capable of self-sensing its own temperature, comprising:

an AlN substrate,

a W layer on said substrate,

a signal source adapted to apply an electrical actuating signal to heat said W layer, and

a sensor adapted to sense the response of said W layer to said actuating signal as an indication of the temperature of said W layer, said W layer having a response to said actuating signal which varies with the W layer's temperature.

2. (Original) The system of claim 1, said W layer comprising a thin film.

3. (Original) The system of claim 1, further comprising an oxidation resistant protective layer on said W layer.

4. (Previously Presented) A sensor system, comprising:

an AlN substrate,

a W layer on said substrate,

an oxidation resistant gold, Au-Pt alloy or Pt protective layer on said W layer,

a signal source adapted to apply an electrical actuating signal to said W layer, and

a sensor adapted to sense the response of said W layer to said actuating signal.

5. (Original) The system of claim 3, said protective layer comprising B_2O_3-SiO_2.

6. (Cancelled)

7. (Previously Presented) The system of claim 4, said protective layer comprising an Au-Pt alloy with W on said Au-Pt alloy.

8. (Previously Presented) The system of claim 4, said protective layer comprising an Au-Pt alloy with B2O3-SiO2 on said Au-Pt alloy.

9. (Cancelled)

10. (Previously Presented) The system of claim 4, said protective layer further comprising Pt with B_2O_3-SiO_2 on said Pt.

11. (Original) The system of claim 3, further comprising an AlN cap on said protective layer.

12. (Original) The system of claim 1, said W layer comprising a plurality of conductive strands distributed on said substrate.

13. (Original) The system of claim 12, wherein said strands are generally parallel and serpentine shaped.

14. (Original) The system of claim 13, wherein said substrate is rectangular.

15-18. (Cancelled)

19. (Previously Presented) The system of claim 1, further comprising an additional AlN substrate with an additional W layer thereon, said signal source connected to apply a substantially non-heating electrical signal to said additional W layer, and a sensor connected to sense a response of said additional W layer as an indication of its temperature,

said additional substrate and additional W layer disposed downstream of said substrate and conductive layer in a fluid flow path, with the difference in temperature between said W and additional W layers corresponding to the fluid flow rate.

20. (Previously Presented) The system of claim 1, said substrate and W layer disposed in a fluid flow path, said response sensed by said sensor corresponding to a fluid flow rate along said path.

21-23. (Cancelled)

24. (Previously Presented) A heater system capable of self-sensing its own temperature, comprising:

an AlN substrate,

a conductive layer on said substrate which, over a predetermined temperature operating range, has an expansion coefficient within 1.00+/-0.07 of said substrate, is substantially non-reactive with said substrate, and exhibits substantially no solid-solubility or interdiffusivity with said substrate,

a signal source adapted to apply an electrical actuating signal to heat said conductive layer, and

a sensor adapted to sense the response of said

conductive layer to said actuating signal as an indication of the temperature of said conductive layer, said conductive layer having a response to said actuating signal which varies with the conductive layer's temperature.

25. (Original) The system of claim 24, said conductive layer comprising a thin film.

26. (Original) The system of claim 24, further comprising an oxidation resistant protective layer on said conductive layer.

27. (Original) The system of claim 26, further comprising an AlN cap on said protective layer.

28. (Original) The system of claim 24, said conductive layer comprising a plurality of conductive strands distributed on said substrate.

29. (Original) The system of claim 28, wherein said strands are generally parallel and serpentine shaped.

30. (Original) The system of claim 29, wherein said substrate is rectangular.

31-34. (Cancelled)

35. (Previously Presented) The system of claim 24, further comprising an additional AlN substrate with an additional conductive layer thereon, said signal source connected to apply a substantially non-heating electrical signal to said additional conductive layer,

and a sensor connected to sense a response of said additional conductive layer as an indication of its temperature,

said additional substrate and additional conductive layer disposed downstream of said substrate and conductive layer in a fluid flow path, with the difference in temperature between said conductive layer and additional conductive layer corresponding to the fluid flow rate.

36. (Previously Presented) The system of claim 24, said substrate and conductive layer disposed in a fluid flow path, said response sensed by said sensor corresponding to a fluid flow rate along said path.

37-39. (Cancelled)

40. (Previously Presented) A heater system capable of self-sensing its own temperature, comprising:

an insulative substrate,

a W conductive layer on said substrate which, over a predetermined temperature operating range, has an expansion coefficient within 1.00+/-0.07 of said substrate, is substantially non-reactive with said substrate, and exhibits substantially no solid-solubility or interdiffusivity with said substrate,

a signal source adapted to apply an electrical actuating signal to heat said W layer, and

a sensor adapted to sense the response of said W layer to said actuating signal as an indication of the temperature of said W layer, said W layer having a response to said actuating signal which varies with the W layer's temperature.

41. (Original) The system of claim 40, said W layer comprising a thin film.

42. (Previously Presented) The system of claim 40, further comprising an oxidation resistant protective layer on said W layer to inhibit oxidation of said conductive layer.

43. (Original) The system of claim 42, further comprising an AlN cap on said protective layer.

44. (Previously Presented) The system of claim 40, said W layer comprising a plurality of conductive strands distributed on said substrate.

45. (Original) The system of claim 44, wherein said strands are generally parallel and serpentine shaped.

46. (Original) The system of claim 45, wherein said substrate is rectangular.

47-50. (Cancelled)

51. (Previously Presented) The system of claim 40, further comprising an additional insulative substrate with an additional W conductive layer thereon, said signal source connected to apply a substantially non-heating electrical signal to said additional conductive layer, and a sensor connected to sense a response of said additional conductive layer as an indication of its temperature,

said additional substrate and additional conductive layer disposed downstream of said substrate and con-

ductive layer in a fluid flow path, with the difference in temperature between said conductive layer and additional conductive layer corresponding to the fluid flow rate.

52. (Previously Presented) The system of claim 40, said substrate and conductive layer disposed in a fluid flow path, said response sensed by said sensor corresponding to a fluid flow rate along said path.

53-69. (Cancelled)

70-72. (Withdrawn)